



GARY BATES

Who's the oddball?

Don't take this the wrong way, reader, but you have a weird way of thinking. **Laura Spinney** explains

IF YOU are reading this, chances are that you're WEIRD. Unless *New Scientist* reader surveys have got it wrong, your cultural background is almost certainly western, educated, industrialised, rich and democratic, aka WEIRD. It's a categorisation that sets you apart from 7 out of 8 people in the world.

But why pick such a derogatory acronym? WEIRD people may be in a minority, but surely that doesn't mean we're strange. Or does it?

All humans have the same kind of brain, so you could be forgiven for believing that what goes on inside your head is normal. Indeed, this is the tacit assumption made by most psychologists. When they want to find out how people think, they tend to recruit the most convenient subjects to take part in their experiments. According to one survey of published research, a full 96 per cent of their guinea pigs came from western industrialised countries, and more than two-thirds of these were psychology undergraduate students (*American Psychologist*, vol 63, p 602).

The psychologists then assume that their results can be extrapolated to the rest of humanity, ignoring the fact that experiments



on non-WEIRD people often indicate the majority of the human population has quite different ways of thinking. Now the full extent of these differences has been exposed.

In a paper titled “The weirdest people in the world?” Joe Henrich, Steven Heine and Ara Norenzayan – all at the University of British Columbia in Vancouver, Canada – conclude that psychologists’ over-dependence on WEIRD experimental subjects has dramatically skewed our understanding of human cognition (*Behavioral and Brain Sciences*, vol 33, p 61). Of course, there are human universals – ways of thinking common to all people (see “Everybody’s doing it”, page 44). But the list is shrinking as a growing body of cross-cultural studies reveals huge differences in fundamental areas of cognition, from our sense of self and reasoning style to our morality and how we perceive the world.

The real surprise of this new meta-analysis, however, is that WEIRD people are frequently “outliers”, often falling at the extreme ends of distributions of performance in psychological studies. *New Scientist* readers (and its writers) really are among the strangest people on Earth.

“WEIRD people tend to think about nature in terms of basic life-forms rather than generic ones. They see trees rather than elms, beeches and oaks”

Take the classic visual illusion called the Müller-Lyer illusion – the one with two lines of equal length, where line “a” appears shorter than line “b” simply because of the way the arrows on their ends are oriented (see diagram, page 44). Way back in the early 1960s, psychologist Marshall Segall at the University of Iowa in Iowa City led a team testing the susceptibility of people from different cultures to this illusion. They manipulated the length of the two lines until observers judged that they were the same, then recorded this point of subjective equality (PSE) – the extent to which “a” had to be made longer than “b” for the two to be judged equal.

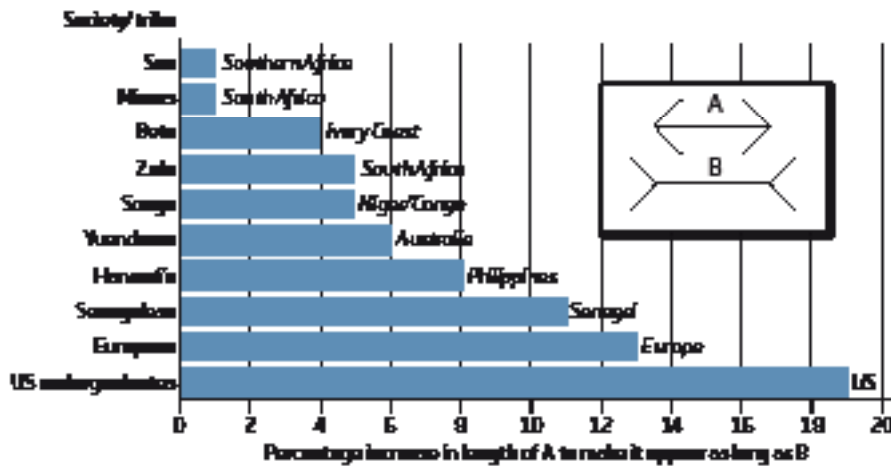
PSE is a measure of the strength of the illusion, and Segall found that students in Evanston, Illinois, were by far the most

affected, requiring “a” to be almost 20 per cent longer than “b” before they judged the two equal. The PSE for the aboriginal San people of the Kalahari desert, at the other end of the spectrum, was close to zero. The illusion wasn’t even an illusion for them.

This finding is not as trivial as it might at first appear. It implies that a fundamental aspect of perception, which had till then been assumed to be hard-wired and therefore common to everyone, is actually shaped during our development by some aspect of the culture in which we live. Though we are far from understanding this effect, Segall and colleagues suggested a possible explanation: people who grow up among carpentered corners – WEIRD people, for example – might be tuned by the geometry of their world to ➤

The long and the short

Lines A and B are of equal length, but for people from different cultures to perceive them as equal line A must be extended by between 1 and 19 per cent



render them more susceptible to the illusion.

So, if you are WEIRD, you perceive the world oddly. You also have a funny way of describing it. English, the lingua franca of the WEIRD world, relies on a system for locating objects that is egocentric or relative to self, as do other Indo-European languages. So an English speaker might say: “The police officer is to the left of my car”. It was assumed for a long time that this was true of all languages – but then exceptions began to crop up. These usually entailed an allocentric frame of reference, describing the location of objects relative to points outside the self, such as the points of the compass (“The police officer is west of the car”) or some other object (“The police officer is between the car and the kerb”).

Egocentric, me?

In 2009, Daniel Haun and Christian Rapold of the Max Planck Institute for Psycholinguistics in Nijmegen, the Netherlands, came up with a striking illustration of how these different cognitive styles affect behaviour. They taught WEIRD Germans and non-WEIRD Namibian hunter-gatherer children a dance routine involving a sequence of hand movements relative to the body that followed the pattern right, left, right, right. Then they turned the dancers around 180 degrees and asked them to perform again. The German children mostly reproduced the same pattern, indicating their use of an egocentric frame of reference, but the Namibians mostly produced the sequence left, right, left, left – indicating their reliance on an allocentric, or absolute, set of coordinates (*Current Biology*, vol 19, p R1068).

With colleague Asifa Majid and others, Haun has investigated the spatial reference systems in around 50 languages, including those spoken by hunter-gatherers such as the

Guugu Yimithirr of Australia and farmers like the Belhare of Nepal (*Trends in Cognitive Psychology*, vol 8, p 108). Of the first 20 languages they looked at, only those spoken in industrialised societies made preferential use of an egocentric frame of reference. Thirty languages later, the pattern still holds. “We think that, traditionally, small-scale societies had this allocentric frame of reference, and switching to an egocentric frame of reference is more recent,” says Majid.

Another recent change experienced by WEIRD people is likely to affect the way you think about the natural world. Psychologist Scott Atran of the University of Michigan in Ann Arbor believes that the default position for humans is to divide up nature broadly by genus (elm, beech, oak, for example), probably because in evolutionary terms, knowing the biological properties of a genus was most valuable in terms of survival. He has found this is what happens in societies living close to nature, such as forest-tending Mayan peoples of Central America. However, a widespread ignorance of nature among people living in urban, industrialised societies means they lack this generic knowledge.

In one 2008 study, Atran found that American students used “tree” to refer to 75 per cent of the trees they saw in a nature walk (*The Native Mind and the Cultural Construction of Nature*, MIT Press). In other words, WEIRD people tend to think about nature in terms of basic life forms, rather than generic ones. Nevertheless, Atran has found that the WEIRD people’s brains still want to parse the natural world in the way their ancestors’ brains did. “Although Americans usually can’t tell the difference between beeches and elms, they expect that biological action in the world is at the level of beeches and elms and not trees.”

If your WEIRD view of nature is unusual,

your concept of yourself is even stranger. This has big repercussions. Several studies show that westerners – specifically, North Americans and western Europeans – have more of a sense of existing as autonomous individuals than do people from east Asia, who are more likely to see themselves as inseparable components of a larger community.

Whether we have an individualist or a collectivist concept of ourselves has been used to explain why westerners tend to try to stand out from a crowd, while easterners want to fit in. It has also been linked with our style of reasoning. Westerners are more inclined to reason analytically, focusing on categories and laws, while easterners reason holistically, paying more attention to patterns and context (*New Scientist*, 10 March 2009, p 32).

According to cultural psychologist Shihui Han of Beijing University in China, an individual may be capable of both styles of reasoning. “However, one cultural system dominates the mind and brain in most people,” he says. And when you look at the human population as a whole, it turns out that the most common reasoning style

EVERYBODY’S DOING IT

Once upon a time, psychologists thought it was safe to assume that fundamental aspects of human brain function, such as visual perception, were hard-wired and common to everyone. Now we know that culture plays a big role in shaping our psychology (see main story). Nevertheless, there are still many big and important areas that, as far as we know, are common to every healthy human being. These include:

- Colour perception
- Recognition of certain facial expressions of emotion, such as fear and disgust
- An approximate number sense for estimating quantities
- A theory of mind: the recognition that other people have their own thoughts, beliefs and intentions which guide their actions – although the age at which this ability emerges varies between cultures
- Mate selection: men in both industrialised and non-industrialised societies prefer a female waist-to-hip ratio of 0.7, as embodied by the likes of Naomi Campbell

“WEIRD culture is so far removed from the social setting in which our species evolved that we should expect to be the oddities”

is holistic. Norenzayan has reported that Arabs and Russians, not to mention African and South American subsistence farmers, favour this approach.

That leaves analytical thinking as a minority trait. Even among westerners, it is employed to varying degrees, with highly educated Americans standing out for their heavy reliance on the analytical style. In other words, WEIRD people like you and me are at the extreme.

That's not all. Our sense of morality is unusual too. Jonathan Haidt, a psychologist at the University of Virginia in Charlottesville, sees morality as a “consensual hallucination”, rather like the Matrix from the movie of the same name, so the cross-cultural analysis outlined by Henrich, Heine and Norenzayan struck a chord with him. “When you read the WEIRD people article, it's like taking the red pill,” he says. “You see, oh my God, I am in one particular matrix, but there are lots and lots of other matrices out there.” What is especially strange about WEIRD morality is the emphasis it places on abstract concepts of justice and individual rights. Other societies also consider these, but their version of morality is more

concerned with people's obligations to their community and often also to their gods.

One key factor underpinning morality is fairness. What is considered fair was long thought to be a universal human trait, but Henrich, working with a team of anthropologists and economists, has shown otherwise. The researchers looked for cross-cultural differences in people's sense of fairness using a game in which one person offers a percentage of a known sum of money to another, anonymously, on the condition that if the second person accepts the offer they both keep their respective shares, but if the second person rejects it neither of them gets anything.

The team found huge differences in behaviour. Strikingly, WEIRD people tended to make the largest offers – around 50 per cent – and when WEIRD folk were in the receiver's position, they were most likely to punish low offers with an outright rejection. People from small-scale societies make lower offers and are less likely to punish low offers from others. In other words, it was the people from the small-scale societies who adopted the more rational approach: this was free money,

after all (*New Scientist*, 10 March 2001, p 38).

Faceless transactions such as these increasingly make the world go around, and Henrich's team wondered whether they could pinpoint the aspects of culture influencing how people behave in these situations. In a paper published in March, they showed that offers can be predicted on the basis of two relatively recent cultural developments: market integration and organised religion (*Science*, vol 327, p 1480). The more a culture relies on market transactions and the greater the participation in world religions such as Christianity and Islam, the more likely people are to behave generously to strangers, the team found.

Punishment behaviour, on the other hand, turns out to be correlated with community size. “If you have communities of 50 or so, you essentially don't punish,” says Henrich. “But once you get up to 5000 or 10,000, then deviation from the 50:50 offer will get punished.” So it would appear that WEIRD ideas about fairness reflect the norms and institutions that evolved to oil the wheels of social interactions in large-scale societies. Your prehistoric ancestors would not have shared your sense of fair play and neither do most people alive today.

Perhaps we shouldn't be surprised that our psychology differs so much from that of the majority of humanity. After all, if culture influences how we think and WEIRD culture is so far removed from the social setting in which our species evolved, then we should expect to be the oddities. But the fact is that most of us never see it that way. That's why the WEIRD paper contains an implicit warning to WEIRD researchers to beware their own prejudices, as well as prejudices they might have inadvertently built into their research tools. There are questions in the standard IQ test, for example, for which a possible analytical answer is considered correct and a possible holistic one incorrect. The majority of humanity would respond “wrongly” to those questions.

The serious message for psychologists is that they need to expand their subject pool before they start drawing conclusions about human psychology, or else restrict those conclusions to the subpopulation whose members they have recruited for their study. As for you, the next time you watch a documentary about the San people or Amazonian foragers, try to remember that you're the exotic one. ■

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People from traditional cultures have a more typical way of thinking